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A STUDY OF VOCABULARY IN GRADE ONE

A Thesis
Presented to
the Graduate Faculty
Central Washington State College

In Partial Fulfillment
of the Requirements for the Degree
Master of Education

by
Carol J. Shockley
May, 1966

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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

Methods of vocabulary development in recent years have been many and varied. Because of this, Cutts has stated:

Perhaps more than at any other time in the history of education, the present generation has given rise to a powerful public reaction as to the purpose and method of reading instruction (10:2).

Teachers must be willing and able to justify methods of reading instruction to the parents of the children they teach (17:ix).

Darrow states:

Good teaching of reading invariably concerns itself with conceptual understanding, for concepts are the ingredients for thinking. The stimulation of thought is a widely accepted goal of teaching reading (11:247).

The conscientious teacher of reading is faced with the endless task of weighing and evaluating the thousands of research studies published during the last two generations in order to keep abreast with modern trends in the broad field of reading. Only after careful experimentation and evaluation of existing studies can the teacher of reading synthesize and compromise the findings in the reports into a workable framework for teaching to be sure that he is making maximum use of the best teaching methods to produce reading reality for every child. "Such a flexible frame of reference is vitally needed today in view of the many conflicting opinions regarding reading instruction" (10:2).

I. THE PROBLEM

Statement of the problem. The purpose of this study was (1) to study vocabulary developing methods in grade one, and (2) to determine if a classroom teacher could help first grade children gain a better understanding of vocabulary through extended conceptual methods.

Importance of the study. "Concept development merits a first order rating in the teaching of reading as a thinking process" (28:101).

It was assumed, but not proven, that the extended conceptual methods used in this study would strengthen vocabulary understanding of first grade children.

Teachers need to be more and more concerned with providing meaningful experiences for developing various concepts if reading is to be a meaningful process rather than an exercise in word calling (30:484). One of the primary reasons of the Bank Street Readers was to present various methods of vocabulary development to urban children (2). Experimenting with new methods of vocabulary development via linguistics was one of the premises for developing the Miami Linguistic Readers (4).

Concepts are important for comprehension in reading since there can be no reading without meaning. Comprehension and reading are related. If a student is poor in vocabulary, this is often reflected in his comprehension (25:475).

McKee states:

There can be no reading without meanings. And there can be no meanings unless the reader has accumulated a wealth of concepts and experiences with which to interpret the symbols he sees in writing and print (20:100).

It is necessary for children to know, through experience, the meaning of a word before they are able to associate the experience with the appropriate symbol (17:187). When the word is seen, they will recall the past experiences which have been associated with it:

Word meanings are secured through relating words with concepts. The pupil acquires these meanings through various types of experiences (7:164).

Only after experiences with the word will the child be able to build concepts to be attached to the word symbol.

"It is unlikely that any amount of formal drill and instruction in reading skills can ever take the place of concept development" (10:22). An understanding of word concepts at the first grade level is very important for children to become good independent readers. According to Hildreth, "The chief goal primary students are working for in vocabulary development is to gain power in independent reading" (18:303). Children's interest is stimulated if they have understandable concepts (3:495).

A child may pronounce a word correctly but attach to it either no meaning at all or else an incorrect interpretation of the word:

Words are symbols. They convey no meaning in and of themselves. . . . One of the most important jobs of the teacher is to help the child develop a rich, meaningful vocabulary that will enable him to interpret adequately and accurately the concepts he reads (17:146).

This becomes a serious problem when a child learns only to make a skillful use of phonics in word attack and has been put through a reading program in which there has been little or no emphasis to word concepts and reading for meaning.

Cutts states:

Whenever such a difficulty becomes apparent . . . one immediate solution may be extra emphasis upon meaning through techniques which require meaningful interpretation, such as aid to concept development (10:57).

In order to read successfully, a child must have both a knowledge of word meanings and a command of concepts. He must be able to control concepts that are related to what he reads (7:79). The ability to read and comprehend results from the child's experiential background. Since some children have received more opportunities than others outside of school, the school must make up for those children whose meager experiential backgrounds have given them an inadequate concept fund. "Concepts that are associated with given verbal symbols are not necessarily uniform among different individuals (3:494). It is for this reason the teacher should not take for granted that the child has an accurate concept for a given vocabulary word. It is most important that children develop correct concepts if they are to be able

". . . to associate ideas precisely and perceive thought relationships with accuracy" (7:109). The teacher must, as a major obligation, provide each child with experiences that will aid in enriching and broadening his vocabulary and in developing his fund of concepts. Hester states:

The building of concepts and the development of a rich, meaningful vocabulary is a never ending task that needs to be continued throughout life. It is the responsibility of the elementary teacher to spark the interest and to provide the child with the means to pursue this activity (17:148).

Limitations of the study. This study was limited to a comparison of two first grade classes in a public elementary school in Yakima, Washington during 25 teaching days of a standard school year.

A further limitation was the possibility of concept development being influenced by previous background experiences or methods other than those involved as a part of the study.

Since concepts can be studied only by their affects, and since the author's own judgment was involved in interpreting the data, the final analysis may not be completely objective.

Many variables could have affected the ratings of the two classes when they were compared with each other. The classes were not matched as to intelligence quotients. The outcome of the findings could have been affected by

unmeasurable factors such as home background and personal experiences, and over-all health and emotional stability of the classes.

II. DEFINITIONS OF TERMS USED

Basal reading methods. The "basal reading methods" used in this study were of two types: (1) flash cards, and (2) word clues.

Concept. Throughout this study, the term "concept" referred to a child's ideas, feelings, impressions, and understandings of vocabulary words and their meanings.

Dramatization. Throughout this study the term "dramatization" referred to the participation of the children in acting out words.

Extended conceptual methods. The "extended conceptual methods" used in this study were of two types: (1) dramatization, and (2) picture dictionary.

First grade readers. Throughout this study, "first grade readers" referred to the children of two first grade classes at Nob Hill School. Each class consisted of 25 children. Of the 50 children, 46 were reading on the primer level and 4 on the pre-primer level.

Flash cards. The "flash cards" used in this study consisted of 3" x 6" cards with each of the 40 words printed on the cards.

Lippencott First Reader. The vocabulary words used in this study were selected from the First Reader, Level I book, published by the J. B. Lippencott Company.

Nob Hill School. "Nob Hill School" is an elementary school in Yakima, Washington. It is located on the west side of town in a middle-upper class district.

Picture dictionary. New words and their meanings accompanied with an illustration in an alphabetized booklet was referred to in this study as a "picture dictionary."

Vocabulary words. The "vocabulary words" used for this study were selected from a first grade reader not used by either group. The words were chosen because they were words that were not a part of most first grader's vocabulary.

Word clues. The children read an entire sentence and tried to think what the unknown word might be from the meaning of the material.

III. ORGANIZATION OF THE REMAINDER OF THE THESIS

The make-up of the remainder of the thesis falls

into four major divisions. First will be a review of the literature of several authorities concerning the need for greater emphasis on concept development, and the various methods used in conducting the study. Chapter III will consist of the methods and procedures to be used in conducting the study. Chapter IV will be a report of the results of the study. The final chapter will consist of conclusions drawn from the study and recommendations for further research.

CHAPTER II

REVIEW OF THE LITERATURE

INTRODUCTION

Of all the valuable skills the average person learns in a lifetime, the ability to read easily heads the list because it is the most universal and the most generally useful for everyone today (18:3).

Effective reading is something very different from looking at printed words while the writer's meaning makes itself clear. It is an active mental process to build an understanding of what a writer means.

Reading is a mental process involving the interpretation of signs perceived through the sense organs. Interpreting print is a specific form of learned behavior which requires grasping meanings through associations which have been formed between oral experience and the printed sentence constructions (18:2).

An author writes to convey a given meaning to the reader. He tries to be clear, exact, and simple with his explanations. It is the responsibility of the reader to arrive at an understanding of what the writer means. "A basic premise in learning to read successfully is that reading is the process of making meanings" (9:81).

CONCEPT DEVELOPMENT

"The real purpose of reading is to get meaning" (17:136). No one reads a word, a sentence, or a paragraph

unless he understands adequately the meaning intended by the writer.

According to Broom:

In addition to his knowledge of word meanings, the child must control concepts that are related to the words, phrases, and sentences that he reads (7:79).

It is impossible for a child to read a word or a group of words included in his beginning reading matter unless he has the concept for which that symbol stands in the setting in which the symbol is used. Braun conducted a study using a "concept formation" test. The results indicated a high correlation between concept understanding and reading achievement (6:682).

"Words are merely symbols for concepts" (30:484). The degree of clearness and the correctness of the meaning a child achieves in reading a given word or a group of words is dependent upon the clearness and correctness of the concept which he has for the word symbol:

Knowing a word means to understand its meaning; or in the case of words with multiple meanings, to be aware of more than one meaning and the recognition of the particular meaning in which the word is used (18:134).

"A concept is a thought element developed from experiences by the grouping of ideas around some focal point" (7:109). The concept a child recalls from a printed page is a concept he has built from his own experiences.

"The point should be made that these concepts exist in

terms of words" (7:80). The meanings a child attaches to words is of greater importance than the total number of words he knows.

Leading authorities agree that it is very important that all concepts for a particular word symbol are learned:

The child must learn different meanings for some words, since his control of multiple meanings of words is an important factor in the refinement of his concepts (7:110).

. . . the child must learn to recognize the symbol, understand the various meanings the word may have, and appreciate the fine shadings of meaning the context may give to the word (17:141).

Bond and Bond suggest that there are three levels of meaning: (1) simple recognition, (2) extensiveness of meanings, and (3) depth or vividness of meanings. It is necessary for children to be able to attach two or more meanings to words that have multiple meanings because so many English words have numerous meanings. It is also desirable for children to attach depth of meaning to words so that they have a "profound" rather than a "superficial" knowledge of words (5:140-1).

In the teaching of reading, the child's attention should be focused so sharply on understanding what he has read that he will become disturbed and seek help when he is unable to understand. According to Harris:

Meaningful concepts not only aid in the interpretation of symbols; there is much experimental evidence to prove that they also aid in fusing the memory of printed symbols so that recognition is aided whenever the word is seen again (16:33).

Concepts cannot be assumed to exist:

Most educators agree that vocabulary building must be a consciously developed program--it cannot be left to chance (17:140).

Due to the fact that some children who enter grade one have enjoyed many opportunities and rich backgrounds of experience and others have been much less favored, it is the responsibility of the teacher to help each child acquire a broad background of experiences and to associate these experiences with appropriate visual symbols. Keshian, in studying the characteristics of children who learn to read successfully, concluded that reading success appears to be the result of many factors: environmental and social (19:652).

So, the important thing for a teacher to remember is that concepts come first and that differences in the experiences of children might produce different concepts of the same thing (30:484).

METHODS OF INSTRUCTION

In a modern program, there is no one best method of teaching reading. A variety of procedures and approaches is needed in meeting the needs of every child. Budoff and Quinlan, in their study on auditory and visual learning in primary children, experimented with aural and visual methods of vocabulary development. Their subjects learned the words much more proficiently with the aural approach (8).

It is most important that the reading program include a balance between skill in word recognition and knowledge in word meaning: "Recognition of printed symbols should always be accompanied by knowledge of meanings" (17:162).

In a study to compare phonic instruction with an eclectic approach to teaching conducted by Tensuan and Davis, it was found that the teaching of reading by a phonic approach was not more effective than the combination methods (29).

Reading should be taught in conjunction with other subjects rather than as an isolated, unrelated subject. According to Hildreth, "Reading is taught from the very beginning as a tool for use. . . . learning to read and using reading are one process" (18:17).

DRAMATIZATION

Children are more apt to learn new words when they are permitted to participate actively in the learning process. According to Hildreth, "The ease of learning words is all bound up with the learner's wishes, interests, and purposes" (18:130). The child will be able to remember a word longer and use it correctly more frequently if he has experienced favorable association with the word.

In learning to read, children seem to proceed more rapidly if they read with their whole body rather than with the eyes alone:

Dramatization furnishes one of the best means of linking reading of stories and poems, speaking, listening, and writing (18:128).

Dramatization is good for all children--from poor readers to gifted readers. It gives children who are experiencing difficulties in learning to read more incentive. For the more advanced readers it can be used as an outlet for creative talents. Not only are new words learned more rapidly when children dramatize them, but interest is added (18:129). Children discover that learning to read can be fun and exciting.

PICTURE DICTIONARY

Children meet many new words for which they do not have adequate understanding when they are learning to read "even in a context of familiar language patterns" (22:340). The young child's interest and progress will be lagging if the teacher isn't readily available to help him unless he has some other source for finding out the meanings of words unfamiliar to him.

Therefore, the picture dictionary is one of the most valuable reading aids for children who are learning to read. ". . . materials of this type encourage the pupil to combine the use of context and picture clues to word recognition" (3:160).

Hildreth believes there is great value in the pictures and simple phrases that accompany each word (18:332). She

also states:

The picture dictionary provides self-help in getting acquainted with words and gives training as a predictionary for locating word meanings preparatory to using a regular school dictionary later on (18:332).

Russell points out several advantages for using the picture dictionary:

. . . the child is given one means of achieving independence in reading. . .

. . . emphasis is placed on meaning rather than on the mechanics of word recognition. . . .

. . . the child is motivated by watching his vocabulary grow in a very tangible form. . . .

. . . the dictionary habit is established at a very early age. . . .

. . . the child learns how to locate information in a dictionary (26:610).

Hester also points out many advantages. She states the picture dictionary is:

. . . valuable for establishing relationships between experiences and words. . . . valuable also for preparatory training in the use of the dictionary and the formulation of independent habits of study (17:187).

There are a variety of picture dictionaries that have been published. It is most helpful for children to have picture dictionaries available for them to turn to when they come upon a word meaning in a story they do not know so that they can find the meaning for themselves through sentences and pictures. Children develop a larger vocabulary of words and meanings by using these books.

Children will also benefit greatly if they can participate in constructing their own picture dictionary (3:610). Pupil-made picture dictionaries are most convenient if they are kept in a loose-leaf notebook in order to keep the pages in alphabetical order as new words are added. As the child meets new words in his reading, all the meanings should be established. The words and all their meanings should then be recorded and illustrated in his picture dictionary. "The basic skills needed for reading a preprimer naturally include many of the skills necessary in reading the text that accompanies the pictures in a picture dictionary" (22:340).

CONTEXT (WORD) CLUES

When words are used to gain the meanings of unfamiliar words, the child is encouraged to skip the word that he does not know and proceed to the end of the sentence. "Usually, if meaning is emphasized, the context in which the unknown word is found unlocks the word" (9:82).

Leading authorities are somewhat controversial in their feelings towards the use of context clues. According to Bond and Bond, "The use of context clues is one of the most important, if not the most important, means of recognition" (5:149).

Hester believes "Recognizing words through context is a permanently useful aid in reading. It is a valuable

tool so long as there are not too many unknown words" (17:144).

Gray recommends the development of the ability to make deductions from context as only one approach:

The method of trying to utilize the context as an aid in recognizing words is a thoroughly wholesome one. It possesses the merit of placing comprehension foremost. When unfamiliar words are encountered, this method introduces the minimum of distraction from thought. If used exclusively or excessively, however, the method may lead to distortion of the thought and the practicing of errors in word perception. The result of these errors will be apparent in time both in misrecognition of words and in a limited reading vocabulary. This method alone is, therefore, insufficient (15:241).

The teacher must avoid many dangers in using word-context clues. Too many unknown words in a paragraph makes it extremely difficult for children to comprehend any meaning. The new words should not be over-emphasized through context, nor should an issue be made over the new word. Forcing comprehension through context can cause frustration if the child is required to spend too long trying to interpret the word for himself (9:82). "It has been found that children gain little if any skill in using this important tool without specific help" (17:172).

In order to use context clues effectively, the child must be given meaningful material to read. As he progresses along in his ability to read, he will make an increasing use of context clues (5:150).

Weaver concludes from his study on context and word

predictability that the location of the omitted (unknown) word in the sentence might be of importance in reading.

Smith summarizes the values and limitations of context clues:

. . . without proper guidance, the use of context clues may result in random guesses; but under wise guidance it becomes one of the most useful ways of finding out new words (27:84).

CONCLUSIONS

Reading is an important means of helping a child "develop gradually and successfully into a competent, self-confident person" (17:281).

It is the responsibility of the teacher to see that children are given adequate training and experiences in reading to develop skill in applying word meanings correctly. "The only sure test of a child's knowledge of a word is his ability to use it" (18:55).

Children must be given training in developing diversified attacks on learning words so that they can recognize and acquire new words and their meanings rapidly and accurately for they must have accurate meanings for words before they can form adequate concepts.

CHAPTER III

METHODS AND PROCEDURES USED

The children used in the study were two first grade classes at Nob Hill School. Each class consisted of 25 children similar according to age and socio-economic background. The two classes will be referred to as Group I and Group II. Group I demonstrated higher intelligence quotients on the SRA Primary Mental Abilities Readiness Test than Group II. Two of the children in Group I were hampered by severe emotional problems (Appendix G).

Seventy-five words were selected at random by the investigator on the grounds that none of the children would know their meanings and would, therefore, have inadequate concepts. The first reader of the Lippencott series was used for selecting the words for two reasons: (1) this book was not used by either group of children, and (2) the vocabulary contained in this book consisted of words not generally a part of a first grader's reading vocabulary (Appendix A).

The investigator designed an oral-usage pretest which required the children to use each of the 75 words in a sentence to determine clarity and accuracy of understanding of the words (Appendix C, Test I). This pretest was administered and a list of 40 words was compiled by the investigator to be used in the study. The other 35 words were deleted because their meanings were understood by more than 50% of the children.

Further pretesting was done on the 40 selected words to determine which children had a prior knowledge and understanding of the meanings of these words. The second pretest set up by the investigator was a story analysis test. It required the children to explain the words as used in several paragraphs read to them by the investigator to further determine clarity and accuracy of understanding (Appendix C, Test II). The final pretest set up by the investigator was an illustration test. The children were asked, by the investigator, to determine how well they could apply the concepts (Appendix C, Test III). The list of 40 words was alphabetized and then divided into two lists--20 words in each list (Appendix B).

In Phase I, Group I, the control group, was given only basic instruction (flash cards and word clues) by the investigator and Group II, the experimental group, was given extended conceptual methods (picture dictionary and dramatization) by the investigator with the first list of words. The same series of oral and written tests given as pretests was then administered by the investigator to the two groups. In addition, the investigator set up a multiple-choice test. The children were asked to select the missing word in a sentence from a choice of three words to determine accuracy of understanding (Appendix C, Test IV).

In Phase II, the methods were reversed using the second list of words. Group I was given the extended

conceptual methods and Group II was given only basic instruction by the investigator. The same oral and written tests were also conducted by the investigator at the end of Phase II (Appendix C) that were used after Phase I.

In order to keep teacher restrictions and influences to a minimum, the investigator conducted all pretesting, teaching and post testing.

An evaluation of the methods used in the vocabulary words was made at the end of the study. The data received from the series of tests was interpreted in terms of completeness of understanding of the concepts learned. The following factors were considered: (1) Consistency: How consistent were the child's responses as testing techniques are varied? (2) Accuracy: How correct were the child's responses? (3) Clarity: How clear were the child's responses? (4) Application: How well could the child apply the concept? (11:253).

CHAPTER IV

RESULTS OF THE STUDY

PRETESTING

Pretesting of 35 of the 75 vocabulary words was stopped after the oral-usage pretest. The 35 words were eliminated because more than 50% of the children used in conducting the study showed an adequate understanding of them and could use the words correctly.

Further pretests were conducted on the 40 remaining words. The children were given two separate tests. First, a story analysis test to further determine clarity and accuracy of understanding was given (Appendix C, Test II). The children were asked to explain the words as used in several paragraphs read to them. The second pretest required the children to illustrate each of the 40 words to determine how well they could apply the concepts.

The results of the pretests were tabulated on a percentage basis for (1) the percentage of children in each group knowing each word, and (2) the percentage of the words each child knew. The only word which was understood by a number of the children was word #30. Fourteen percent of all 50 children knew this word. The children in Group I knew a larger percentage of the concepts to be developed than Group II (Appendix D). The results of all the pretests

showed consistency in the concepts understood.

A tabulation of the concepts already understood showed that in most cases children with I.Q.'s 110 and above understood more concepts than children with I.Q.'s 109 and below. Three of the children indicated an excellent command of 44% or more of the concepts to be developed. A more specific and detailed analysis of the pretests can be found in the charts in Appendix D.

PHASE I

In this phase, Group II was used as the experimental group and received the extended conceptual methods with the first 20 words. Group I was used as the control group and received only basal instruction. The same tests used in pre-testing were administered as post tests. In addition, the children were given a multiple-choice test of filling in missing words in sentences read to them (Appendix C, Test IV).

A tabulation of the results of the post tests taken under Phase I was made on an individual basis to determine what percent of the concepts each child learned (Appendix E).

From Figure 1, one can see that two of the 25 children in Group I (control group) learned 25 percent of the concepts; three children learned 20 percent of the concepts; seventeen children learned 10-15 percent of the concepts; one child learned only 5 percent of the concepts. Two of the children scored higher than the rest of the group; however, these two

children indicated prior knowledge of the concepts in the pretests. From these results the investigator concluded that this group lacked a thorough understanding of the 20 concepts.

From Figure 2, one can see that ten of the 25 children in Group II (experimental group) learned 100 percent of the concepts; ten of the children learned 90 to 95 percent of the concepts; four of the children learned from 80 to 85 percent of the concepts; only one child learned just 25 percent of the concepts. From these results the investigator concluded that this group showed more than an adequate understanding of the 20 concepts.

The results of the post tests were also tabulated on a group basis to determine what percent of the concepts were learned by each group. The children in the control group (those receiving just basal instruction) learned 25 percent or less of the concepts, while the children in the experimental group (those receiving extended conceptual methods) learned 80 to 100 percent of the concepts with the exception of one child with an extremely low I.Q. that learned only 25 percent of the concepts.

A comparison of the two groups in Phase I showed that the extended conceptual methods were superior to the basal methods of instruction regardless of how the results were tabulated.

A comparison of the results on each type of test can

FIGURE 1
PHASE I, GROUP I

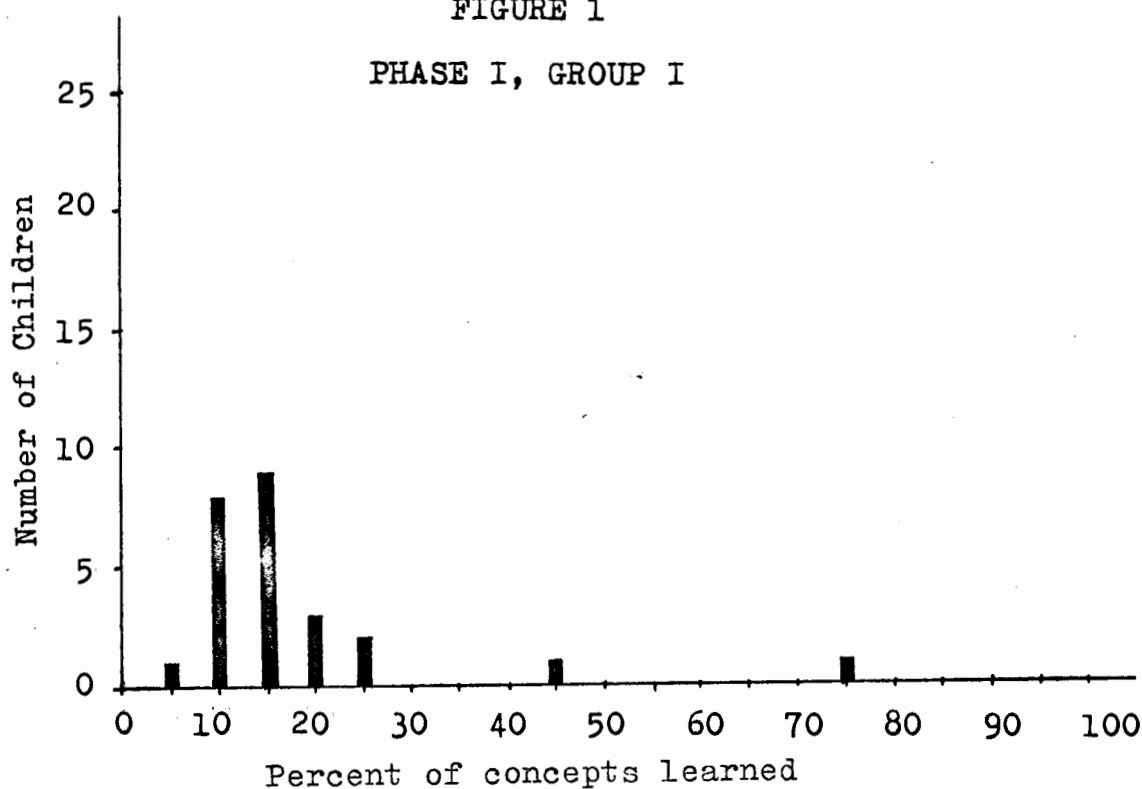
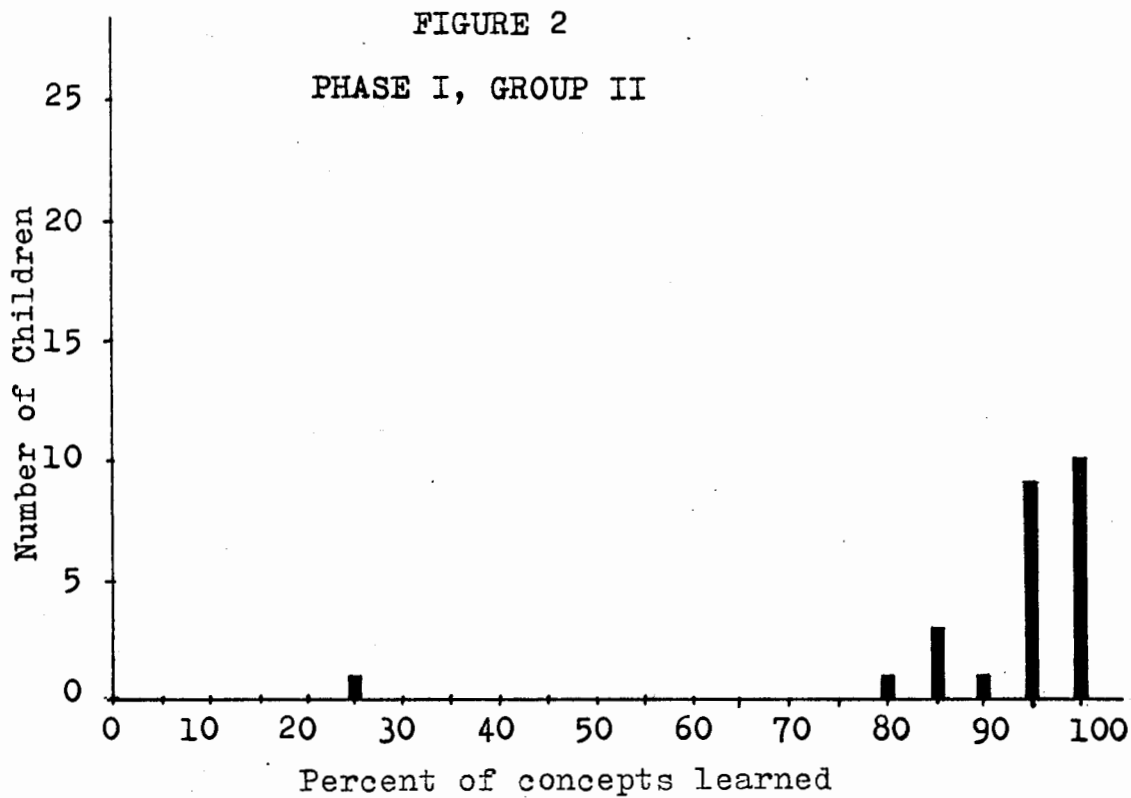


FIGURE 2
PHASE I, GROUP II



be made by studying Appendix E. In most cases the test results were consistent with each other.

PHASE II

In this phase, the type of instruction was reversed. Group I was used as the experimental group and received the extended conceptual methods and Group II became the control group and received the basal methods of instruction. The two groups were then taught the remaining 20 words using these methods. Similar post tests were administered and tabulated in the same manner.

A tabulation of concepts learned was made on an individual basis to determine what percent of the concepts each child learned (Appendix F).

From Figure 3, one can see that 12 of the children in Group I (experimental) learned 100 percent of the concepts; 11 of the children learned 90 to 95 percent of the concepts; one child learned 85 percent of the concepts; one child learned 75 percent of the concepts. From these results the investigator concluded that the children in this group had developed more than an adequate understanding of the last 20 words.

From Figure 4, one can see that three of the children in Group II (control) learned 25-30 percent of the concepts, four of the children learned 20 percent of the concepts; five children learned 15 percent of the concepts; nine children learned 10 percent of the concepts; two children learned five percent of the concepts. One child scored 65 percent; however, she

FIGURE 3
PHASE II, GROUP I

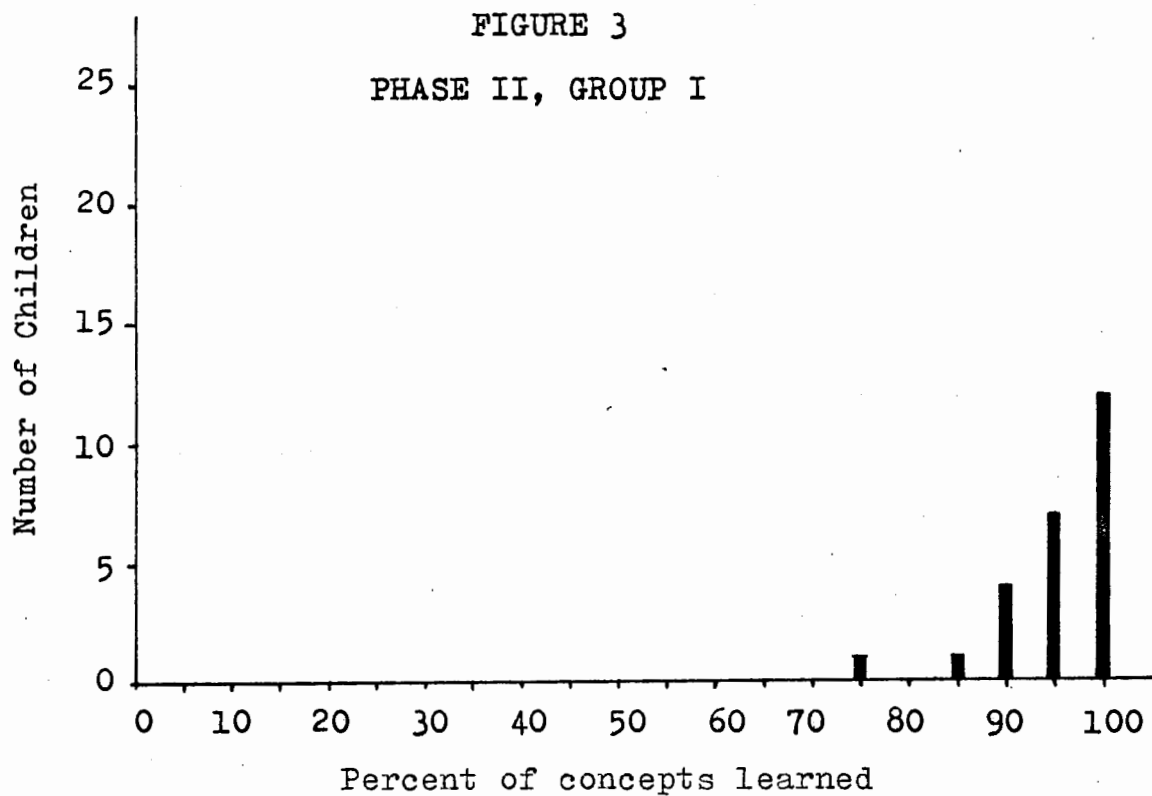
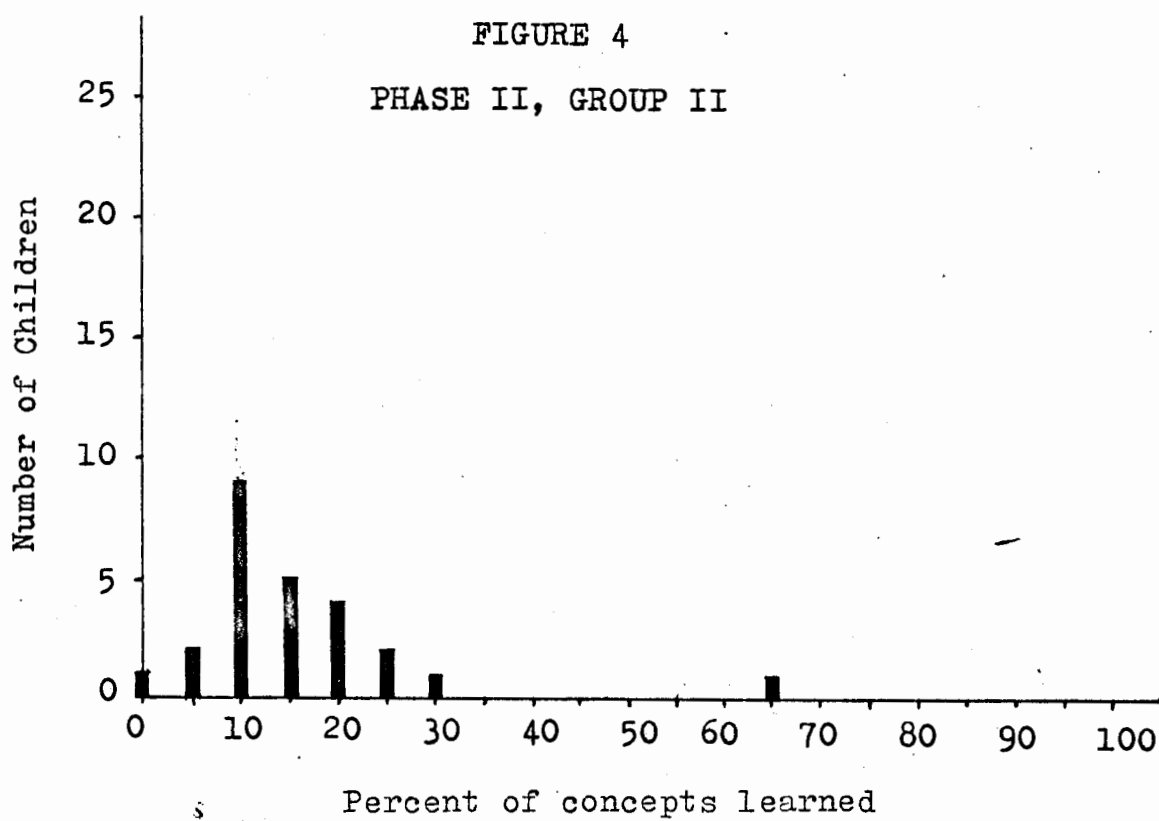


FIGURE 4
PHASE II, GROUP II



indicated prior knowledge of the concepts on the pretests. One child did not learn any of the concepts. From these results the investigator concluded that the children in this group had an inadequate understanding of the last 20 words.

The results of the post tests were also tabulated on a group basis to determine what percent of the concepts were learned by each group. The results indicated that Group I (experimental), learned and retained more concepts than Group II (control). The children in Group II learned 30 percent or less of the concepts while the children in the experimental group learned from 75 to 100 percent of the concepts.

A comparison of the two groups in Phase II showed that the extended conceptual methods were superior to the basal methods of instruction regardless of how the results were tabulated.

There was little difference between the number of concepts learned among the children in Group I (experimental), except for two children who had severe emotional problems.

A comparison of the results on each type of test can be found by studying Appendix F. In most cases the test results were consistent with each other.

SUMMARY

In both Phase I and Phase II, the experimental group, the groups receiving the extended conceptual methods, learned a much higher percentage of the concepts than did the control groups, the groups receiving the basal methods of instruction.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

The purpose of this study was (1) to study vocabulary developing methods in grade one, and (2) to determine if a classroom teacher could help first grade children gain a better understanding of vocabulary through extended conceptual methods.

The results of this study indicated that the extended conceptual methods can be used by the classroom teacher to help children in the first grade gain a better understanding of vocabulary.

In both phases of the study, the experimental groups showed more clarity and were more accurate in their understanding of the concepts; they were also more complete in their application of the concepts.

It was apparent that the methods used by both experimental groups helped to make the children's attitudes more conducive for learning. Since the activities being carried out by the experimental groups were new and different for the children, their interest level was extremely high. This was evidenced by the lack of the need for external control.

The control groups learned and retained a very limited number of concepts. Even though the post tests conducted in the control group revealed that most of the children were

consistent in their responses, the children's understanding of the concepts lacked clarity. Their responses were incorrect and inaccurate. They were also very incomplete in their application of the concepts.

Even though the teacher exerted every effort to develop interest and enthusiasm on the part of the children in the control groups, the basal methods used were lacking in the necessary interest drawing characteristics needed for first graders. Therefore, the need for frequent disciplinary measures was necessary and the teacher was constantly directing the attention of the group back to the lesson.

RECOMMENDATIONS

Since the results of this study indicate that the extended conceptual methods are superior to the basal methods of instruction in developing vocabulary understanding in grade one, the investigator recommends: (1) that extended conceptual methods be emphasized as one of the best methods of teaching reading, (2) that first grade teachers be encouraged to adopt many extended conceptual methods for teaching reading, and (3) that further research be done to: (a) determine the retention of the concept developed using many methods over longer periods of time, (b) determine the value of using extended conceptual methods with these and older children, and (c) determine the length of time extended conceptual methods can be used without losing the interest and enthusiasm of the children.

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APPENDICES

APPENDIX A

APPENDIX A

ORIGINAL LIST OF 75 WORDS SELECTED AT RANDOM FROM THE LIPPENCOTT FIRST READER

1. oars	26. hissed	51. success
2. wade	27. glide	52. permission
3. scare	28. scorch	53. mansion
4. annoy	29. beggar	54. clever
5. chat	30. trade	55. rook
6. quaint	31. lad	56. attic
7. trail	32. celebrate	57. flit
8. fragile	33. excited	58. dingy
9. frail	34. pistol	59. attention
10. quiet	35. whip	60. replied
11. refrain	36. carpet	61. ashamed
12. gentle	37. proper	62. pity
13. twig	38. <u>wonderful</u>	63. terrible
14. grazed	39. tending	64. escape
15. quick	40. strange	65. drowsy
16. gazed	41. hedge	66. stream
17. bravery	42. requested	67. moist
18. huddled	43. moment	68. timed
19. slender	44. strayed	69. lonely
20. wink	45. chase	70. meek
21. smart	46. danger	71. scarlet
22. shears	47. singed	72. soil
23. hiking	48. breeze	73. village
24. doze	49. gloomy	74. angry
25. shade	50. rapidly	75. greedy

APPENDIX B

APPENDIX B

Final lists of words used in conducting the study. List I was used in Phase I of the study with Group II as the experimental group and Group I as the control group. List II was used in Phase II of the study with Group I as the experimental group and Group II as the control group.

List I

1. annoy
2. beggar
3. dingy
4. doze
5. drowsy
6. escape
7. flit
8. fragile
9. frail
10. gazed
11. grazed
12. greedy
13. hedge
14. huddled
15. lad
16. meek
17. moist
18. oars
19. pistol
20. pity

List II

21. proper
22. quaint
23. rapidly
24. refrain
25. replied
26. requested
27. rook
28. scarlet
29. scorched
30. shade
31. shears
32. singed
33. slender
34. soil
35. strayed
36. success
37. tending
38. timid
39. twig
40. village

APPENDIX C

APPENDIX C

TEST I

Make sentences of your own using the following words:

Phase I

1. annoy
2. beggar
3. dingy
4. doze
5. drowsy
6. escape
7. flit
8. fragile
9. frail
10. gazed
11. grazed
12. greedy
13. hedge
14. huddled
15. lad
16. meek
17. moist
18. oars
19. pistol
20. pity

Phase II

21. proper
22. quaint
23. rapidly
24. refrain
25. replied
26. requested
27. rook
28. scarlet
29. scorched
30. shade
31. shears
32. singed
33. slender
34. soil
35. strayed
36. success
37. tending
38. timid
39. twig
40. village

APPENDIX D

RESULTS OF PRETESTS

TEST II

Draw a picture to go with each word. Tell me about the picture:

Phase I

1. annoy
2. beggar
3. dingy
4. doze
5. drowsy
6. escape
7. flit
8. fragile
9. frail
10. gazed
11. grazed
12. greedy
13. hedge
14. huddled
15. lad
16. meek
17. moist
18. oars
19. pistol
20. pity

Phase II

21. proper
22. quaint
23. rapidly
24. refrain
25. replied
26. requested
27. rook
28. scarlet
29. scorched
30. shade
31. shears
32. singed
33. slender
34. soil
35. strayed
36. success
37. tending
38. timid
39. twig
40. village

TEST III

Tell me about the following stories:

Phase I

Mother was annoyed because a beggar came to the door. His clothes were dingy and he looked drowsy. The beggar gazed at mother with greedy eyes.

The lad watched the cows huddled near the hedge. The cows were grazing and could not escape because of the hedge.

Susan looked frail. It was a pity she had been sick for so long. She was very meek when she walked into the room carrying her fragile doll.

Dick dozed off in the boat and the oars fell into the water. The splash frightened the ducks and they flit their wings.

Jack was afraid. His hands were moist, but he held the pistol straight.

Phase II

"Jane's quaint dress is entirely proper for her part in the play," replied the teacher. "She will be a big success if she is not too timid."

The rook rested in the shade of the bushes. It was so hot he refrained from flying. He was busy hunting worms in the fresh soil.

Dick did not notice one lamb stray while he was tending the sheep because he was cutting the hedge with a pair of shears.

Susan did not move the iron over the hanky rapidly enough. She told mother she was sorry she scorched it.

The slender boy in a scarlet shirt requested to carry the bundle of twigs to the nearby village.

The cat singed the end of her tail when she ran too close to the fire.

TEST IV

Underline the correct word in each box that is missing from the sentences as they are read to you.

Phase I

1. Jane will bother Dick. She will _____ him.
2. A man came to our house. He asked for food. He was a _____.
3. The cave was very dark and _____.
4. Which one means to sleep lightly?
5. Sally was very _____ so she went to bed.
6. Close the gate! The dogs will _____!
7. It is Spring. The birds _____ all about.
8. Jane's new doll was very _____.
9. Sally looks very tired and _____.
10. Dick sat and _____ out the window.
11. The sheep _____ in the meadow.
12. Jack was very _____ with his toys.
13. The _____ at Janet's house is very pretty.
14. The children _____ around the little kittens.
15. Dick was a good _____.
16. Janet felt very _____ and afraid before the show.
17. The grass was _____ because of the rain.
18. Where are the _____ for Dick's boat?
19. Jack got a _____ for his birthday.
20. It was a _____ Sally was sick.

The words were arranged like this because:

- (1) The correct answer was entered in the box first, rotating its position.
- (2) The first detractor was entered by reversing the list of words and placing it under the answer.
- (3) The second detractor was entered by taking every third word in the list except for box #10 and #20 to avoid having a word entered in the box twice.

1.
annoy
pity
dingy

2.
pistol
beggar
escape

3.
oars
frail
dingy

4.
doze
moist
greedy

5.
meek
drowsy
lad

6.
lad
oars
escape

7.
flit
huddled
annoy

8.
hedge
fragile
doze

9.
greedy
flit
frail

10.
gazed
grazed
frail

11.
gazed
grazed
hedge

12.
frail
meek
greedy

13.
hedge
fragile
pistol

14.
flit
huddled
beggar

15.
escape
drowsy
lad

16.
meek
drowsy
fragile

17.
doze
moist
grazed

18.
dingy
huddled
oars

19.
pistol
beggar
moist

20.
annoy
pity
pistol

Phase II

21. It is _____ to be on time.
22. Jane's doll is dressed in a _____ dress.
23. To run _____ is to run fast.
24. Please _____ from talking.
25. "Yes, you may go," _____ Mother.
26. Dick _____ a bike for his birthday.
27. Which one is a bird?
28. Sally's new coat is _____.
29. Jane _____ her blouse.
30. It was a warm day. The children sat in the _____.
31. Father used _____ to cut branches off the tree.
32. The cat _____ its tail in the fire.
33. Jane is a very _____ girl.
34. Jack planted seeds in the _____.
35. The puppies _____ from their mother.
36. Dick's party was a big _____.
37. Which one means to take care of?
38. Janet acted very _____ when she met Susan's father.
39. A small branch is a _____.
40. Dick and Jack ran to the _____.

The words were arranged like this because:

- (1) The correct answer was entered in the box first, rotating its position.
- (2) The first detractor was entered by reversing the list of words and placing it under the answer.
- (3) The second detractor was entered by taking every third word in the list except for box #30 and #40 to avoid having a word entered in the box twice.

21.
proper
village
rapidly

22.
twig
quaint
requested

23.
timid
scorched
rapidly

24.
refrain
tending
singed

25.
replied
success
strayed

26.
strayed
requested
timid

27.
soil
proper
rook

28.
scarlet
slender
refrain

29.
singed
scorched
rook

30.
shears
scorched
shade

31.
shears
shade
slender

32.
scorched
singed
success

33.
scarlet
twig
slender

34.
soil
rook
quaint

35.
requested
strayed
replied

36.
replied
scarlet
success

37.
tending
refrain
shears

38.
rapidly
timid
soil

39.
quaint
tending
twig

40.
village
proper
twig

PRETEST I

Word No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38		
Audrey	✓	✓	✓		✓		✓			✓		✓			✓					✓	✓		✓				✓			✓				✓	✓	✓		✓		
Jimmy			✓				✓			✓					✓		✓				✓	✓		✓			✓			✓		✓		✓	✓	✓		✓		
Brad			✓				✓			✓		✓			✓					✓	✓		✓			✓			✓		✓		✓		✓	✓	✓		✓	
Mickey		✓	✓		✓		✓			✓					✓		✓				✓	✓		✓		✓				✓		✓		✓		✓	✓	✓		✓
Brett			✓				✓			✓		✓			✓		✓				✓	✓		✓				✓			✓		✓		✓	✓	✓		✓	
Leslie		✓	✓		✓		✓			✓		✓			✓		✓				✓	✓		✓			✓			✓		✓		✓		✓	✓	✓		✓
Jacqueline		✓	✓		✓		✓	✓				✓	✓	✓		✓	✓	✓				✓	✓				✓	✓	✓	✓	✓		✓			✓	✓	✓		✓
Maureen		✓	✓	✓	✓		✓		✓	✓		✓			✓		✓				✓	✓		✓		✓	✓	✓	✓	✓	✓		✓		✓	✓	✓		✓	
Vicki			✓		✓		✓			✓		✓			✓		✓				✓	✓		✓			✓	✓	✓	✓		✓		✓	✓	✓	✓		✓	
Marvin		✓	✓				✓			✓					✓		✓				✓	✓		✓		✓			✓		✓		✓		✓	✓	✓		✓	
Jeff		✓	✓		✓		✓			✓		✓			✓						✓	✓		✓			✓			✓		✓		✓		✓	✓	✓		✓
Bill		✓	✓				✓			✓					✓		✓				✓	✓		✓		✓			✓		✓		✓		✓	✓	✓		✓	
Ronda		✓	✓		✓		✓			✓					✓		✓				✓	✓		✓		✓			✓		✓		✓		✓	✓	✓		✓	
LeAnn			✓		✓		✓			✓		✓			✓		✓				✓	✓		✓		✓	✓	✓	✓	✓		✓		✓	✓	✓	✓		✓	
Myron		✓					✓			✓					✓						✓	✓		✓				✓		✓		✓		✓		✓	✓		✓	
Craig		✓	✓		✓		✓			✓		✓			✓		✓				✓	✓		✓		✓			✓		✓		✓		✓	✓	✓		✓	
Deanna		✓	✓		✓		✓			✓					✓		✓				✓	✓		✓			✓			✓		✓		✓	✓	✓		✓		
Christi		✓	✓		✓		✓			✓					✓		✓				✓	✓		✓		✓			✓		✓		✓		✓	✓	✓		✓	
Gregg H.			✓				✓			✓		✓			✓						✓	✓		✓			✓			✓		✓		✓		✓	✓		✓	
Linda		✓	✓		✓		✓			✓		✓			✓		✓				✓	✓		✓		✓			✓		✓		✓		✓	✓	✓		✓	
Greg D.			✓				✓			✓		✓			✓		✓				✓	✓		✓			✓			✓		✓		✓		✓	✓		✓	
Denise			✓		✓		✓			✓					✓		✓				✓	✓		✓		✓			✓		✓		✓		✓	✓	✓		✓	
Randy		✓	✓		✓		✓			✓					✓		✓				✓	✓		✓			✓			✓		✓		✓	✓	✓		✓		
Pat			✓				✓			✓		✓			✓		✓				✓	✓		✓		✓			✓		✓		✓		✓	✓	✓		✓	
Patti		✓	✓		✓		✓			✓		✓			✓						✓	✓		✓		✓			✓		✓		✓		✓	✓	✓		✓	
% Knowing Each Word	4	60	100	4	64	100	4	4	100	52	4	4	100	52	4	52	100	96	12	60	52	8	100	8	100	100	8	56	96	8	100									

PRETEST I (Continued)

	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	
Audrey	✓				✓		✓	✓			✓			✓				✓			✓		✓		✓					✓							✓	
Jimmy	✓						✓	✓		✓					✓	✓					✓		✓		✓			✓									✓	
Brad	✓			✓			✓	✓		✓				✓		✓		✓			✓		✓		✓					✓							✓	
Mickey	✓			✓			✓	✓		✓				✓		✓		✓			✓		✓		✓			✓			✓						✓	
Brett	✓						✓	✓		✓					✓	✓		✓			✓		✓		✓												✓	
Leslie	✓			✓			✓	✓			✓			✓	✓	✓					✓		✓		✓												✓	
Jacqueline	✓	✓	✓	✓			✓	✓		✓		✓	✓	✓	✓			✓			✓		✓		✓	✓		✓						✓	✓	✓		
Maureen	✓			✓			✓	✓			✓			✓		✓		✓		✓		✓		✓		✓			✓									✓
Vicki	✓						✓	✓		✓				✓	✓			✓			✓		✓		✓					✓							✓	
Marvin	✓						✓	✓		✓	✓					✓					✓		✓		✓			✓									✓	
Jeff	✓						✓	✓		✓				✓	✓			✓			✓		✓		✓												✓	
Bill	✓			✓			✓	✓			✓			✓	✓						✓		✓		✓			✓									✓	
Ronda	✓			✓			✓	✓			✓				✓	✓		✓			✓		✓		✓	✓											✓	
LeAnn	✓			✓			✓	✓			✓			✓		✓					✓		✓		✓			✓									✓	
Myron	✓						✓														✓		✓														✓	
Craig	✓			✓			✓	✓			✓			✓		✓		✓			✓		✓		✓	✓	✓	✓									✓	
Deanna	✓			✓			✓	✓			✓				✓	✓					✓		✓		✓												✓	
Christi	✓						✓	✓		✓				✓		✓		✓			✓		✓		✓			✓									✓	
Gregg H.	✓						✓	✓		✓					✓			✓			✓		✓		✓			✓									✓	
Linda	✓			✓			✓	✓			✓		✓	✓		✓		✓		✓		✓		✓		✓			✓								✓	
Greg D.	✓						✓	✓		✓	✓				✓						✓		✓		✓			✓									✓	
Denise	✓			✓			✓	✓			✓			✓	✓						✓		✓		✓			✓									✓	
Randy	✓						✓	✓		✓					✓	✓		✓			✓		✓		✓												✓	
Pat	✓						✓	✓		✓				✓		✓					✓		✓		✓			✓									✓	
Patti	✓			✓			✓	✓			✓			✓		✓					✓		✓		✓												✓	
% Knowing Each Word	100	4	4	56			100	96		52	52	4	8	64	52	64		56		8	100		100	4	96	8		4	56			56		4	4	100		

Group II

PRETEST II

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40		
Audrey																	✓																									
Jimmy																																										
Brad																																										
Mickey																																										
Brett																																										
Leslie																																										
Jacqueline	✓					✓		✓		✓		✓	✓	✓	✓			✓			✓																					
Maureen	✓	✓	✓							✓												✓																				
Vicki																																										
Marvin																																										
Jeff																																										
Bill																		✓																								
Ronda																✓																										
LeAnn																																										
Myron																																										
Craig																																										
Deanna																																										
Christi																																										
Gregg H.																																										
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Greg D.																																										
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Pat																																										
Patti																																										
% Knowing Each Word	4	8	8		4	8		4	4		4		4	4	8		4	8	4	8		4		4						12	4		4		8		4	4				

[illegible]

Group II

PRETEST III

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

Audrey
Jimmy
BradMickey
Brett
LeslieJacqueline
MaureenVicki
Marvin
JeffBill
Ronda

LeAnn

Myron
CraigDeanna
Christi

Gregg H.

Linda

Greg D.

Denise

Randy

Pat

Patti

% Knowing
Each Word

4 8 8 4 8 4 4 4 4 4 8 4 8 4 8 4 4 12 4 4 8 4 4

[illegible]

Group I		PRETEST I																																									
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38				
Roby			✓	✓		✓		✓			✓					✓		✓			✓	✓		✓			✓	✓	✓	✓	✓	✓		✓				✓		✓			
Laurie				✓				✓			✓					✓					✓	✓		✓				✓		✓	✓	✓		✓	✓		✓	✓		✓			
Rick	✓	✓	✓					✓			✓		✓			✓		✓				✓		✓				✓		✓	✓	✓		✓			✓			✓	✓		
Teresa		✓	✓		✓			✓			✓		✓	✓		✓						✓		✓		✓		✓		✓	✓	✓		✓			✓			✓	✓		
David		✓	✓		✓			✓			✓		✓			✓		✓				✓		✓					✓	✓	✓	✓		✓	✓		✓	✓		✓	✓		
Jeff			✓					✓			✓		✓			✓					✓	✓		✓		✓			✓	✓	✓	✓		✓			✓			✓	✓		
Julie		✓	✓	✓				✓			✓					✓		✓				✓		✓			✓	✓		✓	✓	✓		✓	✓		✓	✓		✓	✓		
Cecil		✓	✓		✓			✓			✓		✓			✓					✓		✓		✓		✓		✓	✓	✓		✓	✓		✓	✓		✓	✓			
Brian		✓	✓		✓			✓	✓		✓					✓		✓				✓		✓		✓		✓		✓	✓	✓		✓	✓		✓	✓		✓	✓		
Marshall		✓	✓		✓			✓			✓		✓	✓		✓						✓		✓		✓		✓		✓	✓	✓		✓	✓		✓	✓		✓	✓		
Cari		✓	✓		✓			✓			✓	✓				✓		✓				✓		✓		✓		✓	✓	✓		✓	✓	✓		✓	✓		✓	✓			
Karen C.			✓		✓			✓			✓		✓			✓						✓		✓		✓		✓	✓		✓	✓	✓		✓	✓		✓	✓		✓		
Karen I.			✓					✓			✓		✓			✓					✓		✓		✓		✓	✓		✓	✓	✓		✓	✓		✓	✓		✓	✓		
Cathy	✓	✓			✓			✓			✓		✓			✓					✓		✓		✓		✓	✓		✓	✓	✓		✓	✓		✓	✓		✓	✓		
Tim		✓	✓					✓			✓		✓			✓					✓		✓		✓		✓	✓		✓	✓	✓		✓	✓		✓	✓		✓	✓		
Patti		✓	✓					✓			✓		✓			✓			✓			✓		✓		✓		✓	✓		✓	✓	✓		✓	✓		✓	✓		✓	✓	
Doug		✓	✓		✓			✓	✓		✓		✓	✓		✓			✓	✓		✓	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓		✓	✓		✓	✓		✓	✓
Pam		✓	✓		✓			✓			✓		✓			✓			✓			✓		✓		✓		✓	✓		✓	✓	✓		✓	✓		✓	✓		✓	✓	
Douglas			✓		✓			✓			✓					✓					✓		✓		✓			✓		✓	✓	✓		✓	✓		✓	✓		✓	✓		
Kathy K.	✓	✓	✓		✓			✓			✓		✓	✓		✓			✓	✓		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓		✓	✓		✓	✓		
Mark	✓	✓			✓			✓			✓		✓		✓				✓		✓		✓		✓		✓	✓	✓		✓	✓	✓		✓	✓		✓	✓		✓	✓	
Brett			✓		✓			✓			✓					✓						✓		✓		✓		✓	✓		✓	✓	✓		✓	✓		✓	✓		✓	✓	
Rich		✓	✓					✓			✓		✓			✓		✓				✓		✓		✓		✓		✓	✓	✓		✓	✓		✓	✓		✓	✓		
Kelley			✓		✓			✓			✓		✓			✓					✓		✓		✓		✓		✓		✓	✓	✓		✓	✓		✓	✓		✓	✓	
Donald			✓					✓			✓					✓						✓		✓		✓		✓		✓	✓	✓		✓	✓		✓	✓		✓	✓		
% Knowing Each Word		4	68	100	4	64		100	8	4	100	4	56	16		100		60	4	8	52	100	8	100	4	16	64	64	8	12	100		100	100	12	56	100	12	100				

PRETEST I (Continued)

	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	
Roby	✓				✓		✓	✓		✓	✓				✓				✓			✓		✓				✓									✓	
Laurie	✓						✓	✓			✓			✓		✓						✓		✓		✓					✓						✓	
Rick	✓				✓		✓	✓		✓	✓				✓	✓						✓		✓		✓		✓		✓	✓						✓	
Teresa	✓						✓	✓			✓			✓					✓			✓		✓		✓		✓									✓	
David	✓				✓		✓	✓			✓			✓		✓						✓		✓		✓					✓						✓	
Jeff	✓				✓		✓	✓			✓			✓		✓						✓		✓		✓		✓									✓	
Julie	✓						✓	✓			✓				✓	✓	✓		✓			✓		✓		✓					✓						✓	
Cecilia	✓						✓	✓	✓	✓	✓		✓	✓	✓				✓			✓		✓		✓		✓									✓	
Brian	✓				✓		✓	✓		✓	✓					✓	✓	✓	✓			✓		✓		✓				✓			✓		✓	✓	✓	
Marshal	✓	✓	✓				✓	✓			✓			✓	✓	✓						✓		✓		✓		✓			✓						✓	
Cari	✓	✓			✓	✓	✓	✓		✓	✓			✓		✓						✓		✓		✓		✓									✓	
Karen C.	✓						✓	✓			✓			✓		✓		✓				✓		✓		✓					✓						✓	
Karen I.	✓				✓		✓	✓			✓			✓		✓		✓				✓		✓		✓					✓						✓	
Cathy	✓				✓	✓	✓	✓		✓	✓			✓	✓	✓						✓	✓	✓		✓		✓	✓					✓			✓	
Tim	✓				✓		✓	✓		✓	✓				✓				✓			✓		✓		✓		✓									✓	
Patti	✓						✓	✓		✓	✓			✓	✓							✓		✓		✓				✓			✓				✓	
Doug	✓	✓		✓			✓	✓		✓	✓	✓	✓	✓	✓	✓		✓				✓		✓	✓	✓		✓	✓		✓			✓			✓	
Pam	✓						✓	✓			✓			✓		✓		✓				✓		✓		✓		✓		✓							✓	
Douglas	✓						✓	✓			✓			✓				✓				✓		✓		✓					✓						✓	
Kathy	✓				✓		✓	✓		✓	✓	✓	✓	✓	✓	✓		✓				✓		✓	✓	✓	✓	✓		✓		✓	✓	✓	✓		✓	
Mark	✓				✓		✓	✓		✓	✓				✓	✓						✓	✓	✓		✓		✓			✓	✓					✓	
Brett	✓						✓	✓		✓	✓				✓				✓			✓		✓		✓				✓							✓	
Rich	✓				✓		✓	✓			✓			✓	✓							✓		✓		✓				✓							✓	
Kelly	✓				✓		✓	✓		✓	✓				✓	✓	✓		✓			✓		✓		✓		✓			✓						✓	
Donald	✓				✓		✓	✓			✓			✓	✓			✓				✓		✓		✓		✓									✓	
% Knowing Each Word	81	100	4	8	60	8	100	100	4	52	100	8	12	72	60	64	4	56				100	8	100	8	100	4	8	60	4	8	64	4	8	12	12	100	8

PRETEST II

[illegible]

% Knowing Each Word	412	484	84	44448	44412	812	848848816	848128	128881612
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PRETEST II

[illegible][illegible][illegible]

PRETEST III

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

% Knowing Each Word 4 12 4 8 4 8 4 4 4 4 8 4 4 4 12 8 12 8 4 8 8 4 8 8 16 8 4 8 12 8 12 8 8 16 12

PRETEST III

[illegible][illegible][illegible]

APPENDIX E

RESULTS OF POST TESTS, PHASE I

INDIVIDUAL PERCENTAGES
PHASE I

Group II
Experimental

Group I
Control

	Test I	Test II	Test III	Test IV		Test I	Test II	Test III	Test IV
Maureen	95	95	95	95	Kathy	75	75	75	75
Jacqueline	100	100	100	100	Marshal	25	25	25	25
Ronda	95	95	100	95	Rich	20	20	20	20
Craig	90	90	95	90	Mark	15	15	15	20
Linda	100	100	100	100	Doug	55	55	55	55
LeAnn	100	100	100	100	Cathy	10	10	10	15
Mickey	100	100	100	100	Cari	15	15	20	20
Denise	100	100	100	100	Teresa	10	10	10	10
Pat	95	95	95	95	Julie	15	15	15	25
Leslie	100	100	100	100	Roby	20	25	20	25
Deanna	95	95	95	95	Brian	20	20	20	20
Christi	95	95	95	95	Cecilia	15	15	15	15
Audrey	95	95	95	100	Rick	15	15	15	20
Patti	100	100	100	100	Kelley	10	15	15	15
Bill	95	95	95	95	Brett	10	10	10	20
Randy	100	100	100	100	Patti	15	15	15	25
Vicki	95	95	95	95	Douglas	10	10	10	15
Marvin	80	80	80	85	Karen I.	10	5	10	15
Brett	85	85	85	90	David	20	20	30	35
Jeff	85	85	85	90	Karen C.	10	10	10	15
Greg	95	95	95	95	Laurie	10	10	10	10
Brad	95	95	95	95	Pam	15	15	20	35
Gregg	100	100	100	100	Donald	5	5	5	10
Jimmy	85	85	80	90	Jeff	10	10	15	15
Myron	25	25	25	25	Tim	15	15	15	15

Phase I
PERCENT OF CHILDREN KNOWING EACH WORD

		Group II, Test I																			
Accord. to I.Q.		(Experimental)																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
120--		100	100	100	100	100	100	100	100	100	100	100		100	100	100	100	100	100	100	100
110-119		100	100	80	100	100	100	100	100	80	100	100	100	100	100	100	100	80	100	100	100
100-109		100	100	100	100	100	100	83	92	92	75	92	100	100	100	100	83	100	100	100	100
90-99		100	100	83	100	100	100	83	83	50	67	100	100	100	100	100	67	83	100	100	100
73		100	100	100		100															100

TOTAL PERCENT KNOWING EACH WORD

100 100 92 96 100 96 84 88 76 76 92 92 96 96 96 80 88 96 100 96

		Group I, Test I																			
Accord. to I.Q.		(Control)																			
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
120--		14	71	29	29	71	71		43		14	14	14	29		57	14	43	29	57	29
110-119		11	67			33	45		11	22		11	22			33	11	11	11	67	33
100-109		22	33	11	11	33	22		11		11	22	33	22	22	11	22	11		45	22

TOTAL PERCENT KNOWING EACH WORD

12 52 8 12 36 36 12 4 4 12 16 16 12 28 16 16 12 36 16

Phase I

PERCENT OF CHILDREN KNOWING EACH WORD

Group II, Test II

Accord. to I.Q.

(Experimental)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
120--	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
110-119	100	100	80	100	100	100	100	100	80	100	100	100	100	100	100	100	80	100	100	100
100-109	100	100	100	100	100	100	83	100	92	100	100	100	100	100	100	83	100	100	100	100
90-99	100	100	83	100	100	100	83	83	50	67	100	100	100	100	100	67	83	100	100	100
73	100	100	100		100															100

TOTAL PERCENT KNOWING EACH WORD

100 100 92 96 100 96 84 88 76 76 92 92 96 96 96 80 88 96 100 96

Group I, Test II

Accord. to I.Q.

(Control)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
120--	14	71	29	29	57	57		29	14	14	14	29	29	43	29	43	29	57	29	
110-119	11	67			33	33		11	22		11	22		33			11	44	11	
100-109	11	22		11	22	22					11	11	22	11	11	22	11		22	11

TOTAL PERCENT KNOWING EACH WORD

12 52 8 12 36 36 16 4 4 12 16 16 12 28 16 16 12 40 16

Phase I (Cont.)

PERCENT OF CHILDREN KNOWING EACH WORD

Group II, Test III

Accord. to I.Q.

(Experimental)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
120--	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
110-119	100	100	80	100	100	100	100	100	100	100	100	100	100	100	100	100	80	100	100	100
100-109	100	100	100	100	100	100	83	92	92	75	92	100	100	100	100	83	100	100	100	100
90-99	100	100	83	100	100	100	83	83	50	63	100	83	100	100	100	67	83	100	100	83
73	100	100	100		100															100

TOTAL PERCENT KNOWING EACH WORD

100 100 80 96 100 96 84 88 76 76 92 88 96 96 96 80 88 96 100 92

Group I, Test III

Accord. to I.Q.

(Control)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
120--	11	55	22	22	44	44		33	11	11	11	22	22	33	22	33	22	44	22	
110-119	11	67			33	33		11	11		22	11	11		33			11	44	11
100-109	22	33		11	22	22					11	11	22	22	11	22	11		44	11

TOTAL PERCENT KNOWING EACH WORD

16 56 8 12 36 36 16 4 4 16 16 16 12 28 16 16 12 48 16

Phase I (Cont.)
PERCENT OF CHILDREN KNOWING EACH WORD

Group II, Test IV

Accord. to I.Q.	(Experimental)																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
120--	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
110-119	100	100	80	100	100	100	100	100	80	100	100	100	100	100	100	100	80	100	100	100
100-109	100	100	100	100	100	100	92	92	92	75	100	100	100	100	100	83	100	100	100	100
90-99	100	100	83	100	100	100	83	100	67	67	100	100	100	100	100	83	83	100	100	100
73	100	100	100		100															100

TOTAL PERCENT KNOWING EACH WORD

100 100 92 96 100 96 88 92 80 76 96 92 96 96 96 84 92 96 100 96

Group I, Test IV

Accord. to I.Q.	(Control)																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
120--	14	71	28	28	57	57		28		14	14	14	28	28	43	28	43	28	57	28
110-119	11	67			33	33		11	11		11	11			33			11	57	11
100-109	11	22		11	22	22					11	22	22	11	11	22	11		22	11

TOTAL PERCENT KNOWING EACH WORD

12 56 12 12 44 44 20 8 8 16 24 16 16 28 20 20 12 56 28

APPENDIX F

RESULTS OF POST TESTS, PHASE II

INDIVIDUAL PERCENTAGES

PHASE II

Group I
ExperimentalGroup II
Control

	Test I	Test II	Test III	Test IV		Test I	Test II	Test III	Test IV
Kathy	100	100	100	100	Maureen	15	15	15	15
Marshal	95	95	95	100	Jacqueline	65	65	65	70
Rich	100	100	100	100	Ronda	10	10	10	15
Mark	100	100	100	100	Craig	15	15	15	15
Doug	100	100	100	100	Linda	20	20	20	20
Cathy	100	100	100	100	LeAnn	20	20	15	20
Cari	100	100	100	100	Mickey	15	15	10	10
Teresa	90	90	95	95	Denise	15	15	10	10
Julie	75	75	75	85	Pat	15	15	15	20
Roby	95	95	95	95	Leslie	10	10	10	10
Brian	100	100	100	100	Deanna	15	15	15	20
Cecilia	100	100	100	100	Christi	10	10	10	10
Rick	100	100	100	100	Audrey	10	10	10	10
Kelley	85	85	85	90	Patti	10	10	10	15
Brett	95	95	100	100	Bill	30	30	30	35
Patti	100	100	100	95	Randy	15	15	10	15
Douglas	100	100	100	100	Vicki	25	20	25	30
Karen I.	90	90	90	95	Marvin	5	5	5	10
David	95	95	95	95	Brett	5	5	5	15
Karen C.	95	95	95	95	Greg	10	10	10	15
Laurie	90	90	90	90	Jeff	25	25	25	35
Pam	90	90	90	90	Brad	20	20	20	20
Donald	95	95	95	95	Gregg	20	20	15	20
Jeff	95	95	95	95	Jimmy	5	5	15	15
Tim	100	100	100	100	Myron	0	0	0	0

Phase II
PERCENT OF CHILDREN KNOWING EACH WORD

		Group I, Test I (Experimental)																			
Accord. to I.Q.		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
120--		100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
110-119		100	100	100	89	100	67	100	100	89	100	100	89	100	100	100	78	89	89	100	100
100-109		100	100	100	78	67	89	100	100	100	89	100	89	100	89	100	100	100	100	100	100

TOTAL PERCENT KNOWING EACH WORD
100 100 100 88 88 88 96 100 92 96 100 88 96 96 100 88 100 92 100 100

		Group II, Test I (Control)																			
Accord. to I.Q.		21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
120--		100						100							100						
110-119		20	20		20	40		60		20	40	20			60	20	20	40		60	20
100-109		8			8	8		33		17	83	25		17	33		8	8		42	42
90-99		33	17	17	17			17			50	50			50				17	17	
73																					

TOTAL PERCENT KNOWING EACH WORD
20 8 8 12 12 36 12 40 28 8 44 4 8 12 4 36 28

Phase II (Cont.)

PERCENT OF CHILDREN KNOWING EACH WORD

Group I, Test II (Experimental)

Accord. to I.Q.

	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
120--	100	100	100	100	100	100	100	100	100	100	100	100	86	100	100	86	100	100	100	100
110-119	100	100	100	100	100	67	89	100	78	100	100	78	100	100	100	78	100	78	100	100
100-109	100	100	100	78	67	89	100	89	100	89	100	89	100	89	100	100	100	100	100	100

TOTAL PERCENT KNOWING EACH WORD

100 100 100 84 88 88 96 96 92 96 100 84 96 96 100 88 100 92 100 100

Group II, Test II (Control)

Accord. to I.Q.

	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
120--	100						100							100						
110-119	20	20	20	20	40	20	60		20	40	20			60	20	20	40		60	40
100-109				8	8		33		17	42	33		17	33		8	8		42	42
90-99	33	17	17	17			17			50	50			50				17	17	
73																				

TOTAL PERCENT KNOWING EACH WORD

20 8 8 12 12 4 36 12 40 28 8 44 4 8 12 4 36 28

Phase II (Cont.)
PERCENT OF CHILDREN KNOWING EACH WORD

Group I, Test III

Accord. to I.Q.	(Experimental)																			
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
120--	100	100	100	100	100	100	100	100	100	100	100	100	86	100	100	100	100	100	100	100
110-119	100	100	100	100	100	67	89	100	78	100	100	89	100	100	100	89	100	78	100	100
100-109	100	100	100	78	67	89	100	89	100	89	100	89	100	89	100	100	100	100	100	100

TOTAL PERCENT KNOWING EACH WORD

100 100 100 88 88 88 96 96 92 96 100 92 96 96 100 92 100 92 100 100

Group II, Test III

Accord. to I.Q.	(Control)																			
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
120--	100						100							100						
110-119	20	20	20	20	40	20	40		20	40	20			60	20	20	40		60	40
100-109	8		8	8			33		17	83	17		17	33		8	8	8	50	33
90-99	33	17	17	17			17			50	58			50				17	17	
73																				

TOTAL PERCENT KNOWING EACH WORD

20 8 8 12 8 4 32 12 40 28 8 44 4 8 12 4 36 28

Phase II(Cont.)
PERCENT OF CHILDREN KNOWING EACH WORD

Group I, Test IV

Accord. to I.Q.	(Experimental)																			
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
120--	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	86	100	100	100	100
110-119	100	100	100	100	100	67	88	100	78	100	100	78	100	100	100	88	100	78	100	100
100-109	100	100	100	78	67	88	100	100	100	88	100	88	88	88	100	100	100	100	100	100

TOTAL PERCENT KNOWING EACH WORD

100 100 100 88 88 84 100 100 96 96 100 92 100 96 100 92 100 96 100 100

Group II, Test IV

Accord. to I.Q.	(Control)																			
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
120--	100						100							100						
110-119	20	20	20	20	40	20	60	20	20	40	40			60	20	20	40	80	40	
100-109	8			8	8		33		8	50	17		17	50		17	8	17	42	42
90-99	50	17	33	17	17		17			67	67		17	50				17	33	
73																				

TOTAL PERCENT KNOWING EACH WORD

24 8 12 12 16 4 36 4 12 48 32 12 52 4 12 12 12 44 28

APPENDIX G

PMA SCORES

PRIMARY MENTAL ABILITIES TEST

Group I

School Nob HillExaminer Carol ShockleyDate Administered Sept. 15, 1965 Grade One

<u>Name</u>	<u>CA</u>	<u>V</u>	<u>P</u>	<u>Q</u>	<u>Mo</u>	<u>S</u>	<u>Total IQ</u>
Kathy	6-9	8-2	9-0	8-8	7-2	8-0	126
Marshal	6-6	8-4	8-0	8-0	7-0	6-6	123
Richard	6-6	7-8	7-2	8-0	7-4	8-0	121
Mark	6-6	8-8	7-4	7-8	7-4	6-8	121
Doug	6-9	7-4	8-8	9-0	7-0	7-4	121
Cathy	6-8	7-10	7-8	8-8	8-4	6-4	120
Cari	6-8	7-3	7-8	8-1	8-4	6-7	120
Teresa	6-2	7-2	8-4	7-0	7-6	6-6	119
Julie	6-1	7-2	8-4	7-0	7-6	6-6	118
Roby	6-3	7-2	7-2	7-8	7-4	7-4	117
Brian	7-0	8-2	8-8	8-0	7-0	6-0	114
Cecilia	6-9	7-8	7-2	8-4	7-10	5-6	114
Rick	6-5	7-2	6-2	7-0	5-2	7-4	114
Kelley	6-8	7-8	6-6	7-8	5-8	7-4	112
Brett	6-3	6-10	8-4	6-10	6-10	6-6	112
Patti	6-7	6-8	7-4	8-0	6-10	6-6	111
Douglas	6-5	6-8	6-6	7-8	6-8	6-6	109
Karen I.	6-7	7-2	7-8	7-4	6-6	5-10	109
David	6-6	6-8	6-6	7-8	5-4	6-8	108
Karen	6-0	6-0	6-6	6-8	7-4	6-4	106
Laurie	6-3	6-8	7-4	6-2	7-0	5-6	104
Pam	6-11	6-10	7-2	7-8	8-10	6-2	104
Donald	6-9	6-6	7-8	7-4	6-2	6-8	104
Jeff	6-9	6-4	6-8	7-2	6-10	7-0	101
Tim	7-2	6-8	8-8	7-4	7-8	6-8	100

PRIMARY MENTAL ABILITIES TEST

Group II

School Nob Hill

Examiner Carol Shockley

Date Administered Sept. 15, 1965 Grade One

Name					Mental Ages			Quotient
	CA	V	P	Q	Composite V-P-Q	Mo	S	Total IQ
Maureen	6-1	6-10	5-8	8-0		6-8	7-8	121
Jacqueline	6-6	7-4	7-8	7-8		7-10	6-6	115
Ronda	5-11	6-8	6-0	7-2		7-0	6-8	115
Craig	7-2	8-0	7-2	7-2		7-0	6-8	113
Linda	6-5	7-2	8-8	7-0		9-0	6-8	112
LeAnn	6-9	7-4	5-10	8-0		8-10	8-8	111
Mickey	6-2	6-6	6-6	6-10		8-10	6-2	108
Denise	6-3	6-6	6-0	7-2		9-0	6-4	107
Pat	7-0	7-4	9-0	7-4		7-6	7-4	107
Leslie	6-11	7-4	7-8	7-2		7-10	7-4	106
Deanna	6-10	6-6	6-2	8-0		9-0	7-4	105
Christie	6-3	6-2	6-10	6-10		6-8	6-6	105
Audrey	6-10	7-2	8-4	6-10		7-10	6-6	105
Patti	6-5	6-6	5-10	7-2		7-2	6-2	104
Bill	6-8	6-10	5-10	7-0		7-4	7-8	103
Randy	7-2	8-2	5-6	7-4		8-8	7-8	102
Vicki	6-10	6-10	5-10	7-8		8-6	7-0	102
Marvin	6-11	7-8	6-0	7-2		7-2	5-10	101
Brett	6-9	7-2	6-6	6-10		5-2	5-2	99
Jeff	6-9	6-6	8-0	6-6		6-8	5-10	99
Gregg	6-7	6-6	6-0	6-10		7-0	6-6	97
Brad	6-6	6-10	6-8	5-8		6-8	5-8	95
Gregg	6-11	6-2	5-8	7-0		8-2	6-6	94
Jimmy	6-10	6-0	5-6	6-10		7-10	6-2	93
Myron	6-8	5-6	4-4	4-10		6-4	3-2	73